

22. A shape memory polymer in accordance with Claim 21 wherein said vinyl compound is vinyl neodecanoate, vinyl benzoate, vinyl propionate, vinyl stearate, a methylstyrene, 4-(vinylloxy)butyl stearate or a vinyl pyridine.

23. A shape memory polymer in accordance with Claim 21 wherein said crosslinking agent is difunctional.

24. A shape memory polymer in accordance with Claim 23 wherein said difunctional crosslinking agent is divinyl benzene, bis(4-(vinylloxy)butyl)terephthalate or bis(4-((vinylloxy)methyl)cyclohexyl)methyl terephthalate.

REMARKS

Reconsideration of the application in view of the foregoing amendments and following remarks is respectfully requested. The Examiner rejected claim 13 under 35 U.S.C. § 112, second paragraph as indefinite based on a "clerical error," which is the misspelling of "azobisisobutyronitrile." The amendments to the claims correct this error and withdrawal of the Section 112 rejection is requested.

The Examiner rejected claims 1, 4 through 9 and 18 under 35 U.S.C. § 102(b) or alternative 103(a) as anticipated or obvious over United States Patents Nos. 3,383,336 and 5,880,240. According to the Examiner, the "cited references each disclose polymer comprising the requisite reaction product."

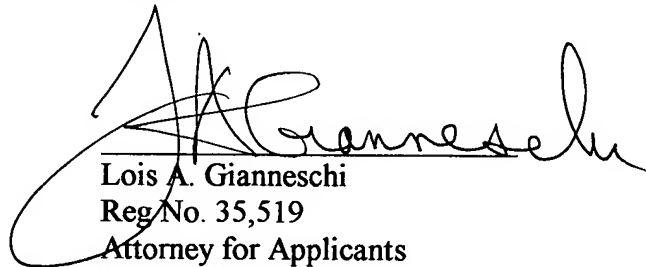
Applicant's invention is directed to a shape memory polymer. Neither cited reference teaches or discloses a shape memory polymer. Further, consideration of the references in combination does not teach or disclose shape memory polymers. In fact, the references are directed to thermosetting polymers (see, for example, column 3, lines 29-31 regarding use of amount of crosslinking agent used). Thermosetting polymers would not exhibit shape memory properties due to their lower capacity, compared to shape memory polymers, to deform. Because the references do not provide a basis for

either a Section 102(b) or 103(a) rejection, withdrawal of these rejections is respectfully requested.

Applicant submits that the claims, as amended, are in condition for allowance. Entry of the amendments, withdrawal of the rejection, and allowance of the claims are requested.

Respectfully submitted,

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MARKED COPIES OF RELEVANT PORTIONS OF THE SPECIFICATION AND
ALL CLAIMS SHOWING AMENDMENTS

In the specification:

Replace page 1, lines 7-8 with the following:

-- This application claims priority from provisional applications, Serial No. 60/263,986, filed January 24, 2001, [both applications are] which application is incorporated herein by reference.--

Replace page 4, lines 8-14 with the following:

--A new use of shape memory polymers has recently been identified. This use us as the material of construction of contact lens molds employed in the fabrication of contact [lens] lenses. Copending application, United States Serial No. [_____] VTN-575] 10/056,773, filed concurrently with the present application, incorporated herein by reference, describes this new utility. Additionally, shape memory polymers can be employed in an agile mold as the molding surface of the agile mold as described in Serial No. [_____] (VTN-575)] 10/056,773, and in US Serial No. 09/649,635 [(VTN-504)] incorporated herein by reference.--

In the claims:

1. (once amended) A shape memory polymer comprising a reaction product of styrene, a vinyl compound other than styrene, about 0.5 to about 5 % by weight of a multifunctional crosslinking agent and an initiator.
2. (once amended) A shape memory polymer in accordance with Claim 1 wherein said reaction product [comprising] further comprises a modifying polymer.

3. (unamended) A shape memory polymer in accordance with Claim 1 wherein said vinyl compound is vinyl neodecanoate, vinyl benzoate, vinyl propionate, vinyl stearate, a methylstyrene, 4-(vinylloxy)butyl stearate or a vinyl pyridine.
4. (unamended) A shape memory polymer in accordance with Claim 1 wherein said crosslinking agent is difunctional.
5. (unamended) A shape memory polymer in accordance with Claim 4 wherein said difunctional crosslinking agent is divinyl benzene, bis(4-(vinylloxy)butyl)terephthalate or bis(4-((vinylloxy)methyl)cyclohexyl)methyl terephthalate.
6. (unamended) A shape memory polymer in accordance with Claim 1 wherein said initiator is a free radical initiator or ionic initiator.
7. (unamended) A shape memory polymer in accordance with Claim 6 wherein said initiator is a free radical initiator.
8. (unamended) A shape memory polymer in accordance with Claim 7 wherein said free radical initiator is an organic peroxide.
9. (unamended) A shape memory polymer in accordance with Claim 6 wherein said initiator is a cationic initiator.
10. (unamended) A shape memory polymer in accordance with Claim 2 wherein said modifying polymer is a thermoplastic polymer compatible with said polymer formed by the reaction product of said styrene and said vinyl compound.
11. (unamended) A shape memory polymer comprising a polymeric reaction product of styrene, a vinyl compound selected from group consisting of vinyl neodecanoate, vinyl benzoate, vinyl propionate, vinyl stearate, a methylstyrene, a vinyl

pyridine and 4-(vinylloxy) butyl stearate, a difunctional crosslinking agent and a free radical or a cationic initiator.

12. (unamended) A shape memory polymer in accordance with Claim 10 wherein said difunctional crosslinking agent is selected from the group consisting of divinyl benzene, bis[4-(vinylloxy)butyl] terephthalate and bis[[4-(vinylloxy)methyl]cyclohexyl]methyl] terephthalate.

13. (once amended) A shape memory in accordance with Claim 12 wherein said free radical or cationic initiator is selected from the group consisting of t-butyl peroxide, t-butyl hydroxyperoxide, benzoyl peroxide, dicumyl peroxide, lauroyl peroxide, 2,2'-[axobisisobutyronitrile] azobisisobutyronitrile, boron [trifluoride] trifluoride, boron trifluoride diethyl etherate, aluminum [trifluoride] trichloride and tin (IV) chloride.

14. (unamended) A shape memory polymer in accordance with Claim 13 wherein said reaction product includes a thermoplastic compatible with the reaction product of said styrene and said vinyl compound.

15. (unamended) A shape memory polymer in accordance with Claim 13 wherein said thermoplastic is polystyrene or a polyolefin.

16. (unamended) A shape memory polymer in accordance with Claim 13 wherein said vinyl compound is vinyl neodecanoate, said difunctional crosslinking agent is divinyl benzene and said initiator is selected from the group consisting of dicumyl peroxide, benzoyl peroxide and lauroyl benzene.

17. (unamended) A shape memory polymer in accordance with Claim 16 wherein said reaction product includes polystyrene.

18. (unamended) A shape memory polymer in accordance with Claim 1 wherein said reaction mixture is polymerized at a temperature in the range of between about 20°C and about 150°C and a pressure in the range of between about 14.7 psi and 50 psi over a time period in the range of between about 2 seconds and about 4 days.

19. (unamended) A shape memory polymer in accordance with Claim 11 wherein said styrene comprises between about 30% and about 95%; said vinyl compound comprises between about 5% and about 60%; said difunctional crosslinking agent comprises between about 0.5% and about 5% and said initiator comprises between about 0.1% and about 4%, said percentages being by weight, based on the total weight of said shape memory polymer reaction mixture.

20. (unamended) A shape memory polymer in accordance with Claim 14 wherein said styrene comprises between about 40% and about 85%; said vinyl compound comprise between about 5% and about 20%; said difunctional crosslinking agent comprises between about 0.6% and about 3%; said initiator comprises between about 0.5% and about 3%; and said thermoplastic comprises between about 5% and about 50%, said percentages being by weight, based on the total weight of said shape memory polymer reaction mixture.

21. (new) A shape memory polymer comprising a reaction product of styrene, a vinyl compound other than styrene, a multifunctional crosslinking agent, an initiator and a modifying polymer.

22. (new) A shape memory polymer in accordance with Claim 21 wherein said vinyl compound is vinyl neodecanoate, vinyl benzoate, vinyl propionate, vinyl stearate, a methylstyrene, 4-(vinylloxy)butyl stearate or a vinyl pyridine.

23. (new) A shape memory polymer in accordance with Claim 21 wherein said crosslinking agent is difunctional.

24. (new) A shape memory polymer in accordance with Claim 23 wherein said difunctional crosslinking agent is divinyl benzene, bis(4-(vinylloxy)butyl)terephthalate or bis(4-((vinylloxy)methyl)cyclohexyl)methyl terephthalate.